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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,162	06/30/2005	Koji Kikushima	14321.80	4381
22913	7590	12/13/2006	EXAMINER	
WORKMAN NYDEGGER (F/K/A WORKMAN NYDEGGER & SEELEY) 60 EAST SOUTH TEMPLE 1000 EAGLE GATE TOWER SALT LAKE CITY, UT 84111			SINGH, DALZID E	
		ART UNIT		PAPER NUMBER
		2613		

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/541,162	KIKUSHIMA, KOJI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dalzid Singh	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 28 September 2006.
- 2a) This action is FINAL.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration..
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1,2,4,5,7-14,16,20 and 21 is/are rejected.
- 7) Claim(s) 3,6,15 and 17-19 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 28 September 2006 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4, 5, 7-14, 16, 20 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Sarraf (US Patent No. 7,072,592).

Regarding claim 1, Sarraf disclose a wavelength multiplex transmission system having a transmission apparatus and a receiving apparatus connected via an optical transmission line, (transmitting section in shown in Fig. 1 and receiving section on Fig. 2) wherein:

the transmission apparatus is configured to convert differential signals ((E/O) 110-1 to 110-2M) of the input signal to separate optical signals to transmit to the optical transmission line; and

the receiving apparatus is configured to receive the separate optical signals from the optical transmission line to reproduce the differential signals (see Fig. 2).

Regarding claim 2, wherein the receiving apparatus further combines the reproduced differential signals to reproduce the input signal (the received signals, L1 and L2, are combined as sink1).

Regarding claim 4, Sarraf disclose a wavelength multiplex transmission system having a transmission apparatus and a receiving apparatus connected via an optical transmission line, wherein:

the transmission apparatus (shown in Fig. 1) comprises: (N+M) optical transmitters (where N is an integer of 2 or more and M is an integer from 1 to N) for transmitting input signals as optical signals with different wavelengths, M differential dividers (the signal is split into 105-1 to 105-M) for differentially dividing M input signals out of the input signals, respectively, and inputting the differentially divided signals into 2.times.M optical transmitters out of the (N+M) optical transmitters, respectively, and a wavelength multiplex filter (115) for wavelength multiplexing and outputting the (N+M) optical signals from the (N+M) optical transmitters, and wherein: the receiving apparatus comprises; a wavelength separation filter (215) for separating the wavelength multiplexed optical signals to output (N+M) optical signals; (N+M) optical receivers (210-1 to 210-M) for receiving the (N+M) optical signals from the wavelength separation filter, respectively, to output signals; and M differential combiners (the combiner are within the differential detector), each differentially combining the output signals from the two optical receivers receiving a pair of optical signals which have been

differentially divided and transmitted, out of the (N+M) optical receivers, to output one signal.

Regarding claim 5, wherein the transmission apparatus has two corresponding differential signals from one differential divider as inputs to two optical transmitters, respectively, and transmits the two differential signals as separate optical signals with adjacent wavelengths (see col. 2, lines 21-26).

Regarding claim 7, Sarraf disclose optical transmission comprising:  
optical conversion means for converting differential signals to optical signals (E/O converts electrical to optical signals); and optical transmission means for transmitting the converted optical signals.

Regarding claim 8, wherein the optical conversion means converts the differential signals to optical signals with different wavelengths; and the optical transmission means multiplexes the optical signals with different wavelengths to transmit (see col. 2, lines 21-26).

Regarding claim 9, wherein the system further comprising differential divider means for dividing an input signal to the differential signals (see Fig. 2).

Regarding claim 10, Sarraf disclose transmission apparatus, comprising:  
(N+M) optical transmitters (where N is an integer of 2 or more and M is an integer from 1 to N) for transmitting input signals as optical signals with different wavelengths (see Fig. 1); M differential dividers for differentially dividing M input signals out of the input signals, respectively (the signal is split into 105-1 to 105-M), and

inputting the differentially divided signals into  $2 \times M$  optical transmitters out of the  $(N+M)$  optical transmitters, respectively; and a wavelength multiplex filter for wavelength multiplexing the  $(N+M)$  optical signals from the  $(N+M)$  optical transmitters to output.

Regarding claim 11, the transmission apparatus further inputting two corresponding signals from one differential divider into two optical transmitters, respectively, and transmitting them as optical signals with adjacent wavelengths (see col. 2, lines 21-26).

Regarding claim 12, Sarraf disclose receiving apparatus for receiving optical signals including differential signals, shown in Fig. 2, comprising:

optical receiving means for receiving the optical signals; and optical conversion means for reproducing the differential signals from the optical signals.

Regarding claim 13, wherein the differential signals are wavelength-multiplexed as optical signals with different wavelengths; and the optical conversion means reproduces the differential signals from the optical signals with different wavelengths (differential detectors reproduced the signal).

Regarding claim 14, the apparatus further comprising differential combining means for combining the reproduced differential signals (shown in Fig. 2 as sink).

Regarding claim 16, Sarraf disclose a receiving apparatus, as shown in Fig. 2, comprising:

a wavelength separation filter (215) for separating a wavelength multiplexed optical signal to output (N+M) optical signals (where N is an integer of 2 or more and M is an integer from 1 to N); (N+M) optical receivers (210-1 to 210-M) for receiving the (N+M) optical signals from the wavelength separation filter, respectively, to output signals; and M differential combiners for differentially combining the output signals from two optical receivers receiving a pair of optical signals out of the (N+M) optical receivers, to output one signal (the combiners are within the differential detector).

Regarding claim 20, as shown in Fig. 2, Sarraf show differential divider means (215) for dividing an input signal to the differential signals.

Regarding claim 21, as shown in Fig. 1, Sarraf show differential combining means (115) for combining the reproduced differential signals.

### ***Allowable Subject Matter***

3. Claims 3, 6, 15, 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DS  
December 8, 2006

*Dabir Singh*